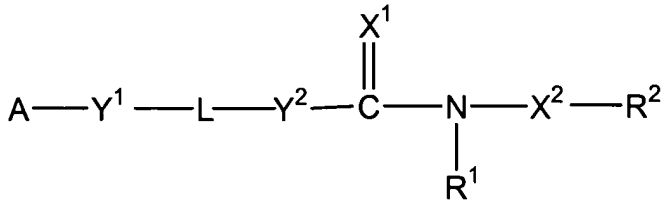
WHAT IS CLAIMED IS:

1. A method of inhibiting sodium ion transport in an airway epithelial cell comprising contacting the cell with a compound including an oxyamide linkage in an amount effective to inhibit sodium ion transport.

2. The method of claim 1, wherein the compound is of formula (I):



(I)

wherein

A is a cyclic moiety selected from the group consisting of C_{3-14} cycloalkyl, 3-14 membered heterocycloalkyl, C_{4-14} cycloalkenyl, 3-8 membered heterocycloalkenyl, aryl, or heteroaryl; the cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl; or A is a saturated branched C_{3-12} hydrocarbon chain or an unsaturated branched C_{3-12} hydrocarbon chain optionally interrupted by -O-, -S-, $-N(R^a)-$, -C(O)-, $-N(R^a)-SO_2-$, $-SO_2-N(R^a)-$, $-N(R^a)-C(O)-O-$, $-O-C(O)-N(R^a)-$, $-N(R^a)-C(O)-N(R^b)-$, -O-C(O)-, -C(O)-O-, $-O-SO_2-$, $-SO_2-O-$, or -O-C(O)-O-, where each of R^a and R^b, independently, is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; each of the saturated and the unsaturated branched hydrocarbon chain being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl;

each of Y^1 and Y^2, independently, is $-CH_2-$, -O-, -S-, $-N(R^c)-$, $-N(R^c)-C(O)-O-$, $-O-C(O)-N(R^c)-$, $-N(R^c)-C(O)-N(R^d)-$, -O-C(O)-O-, or a bond; each of R^c and R^d, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

L is a straight C_{2-12} hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond;

said hydrocarbon chain being optionally substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxy, hydroxyl, halo, amino, nitro, cyano, C_{3-5} cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C_{1-4} alkylcarbonyloxy, C_{1-4} alkyloxycarbonyl, C_{1-4} alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N(R^e)-, -N(R^e)-C(O)-O-, -O-C(O)-N(R^e)-, -N(R^e)-C(O)-N(R^f)-, or -O-C(O)-O-; each of R^e and R^f, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

R^1 is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, haloalkyl, or an amino protecting group; and

R^2 is hydrogen, alkyl, hydroxylalkyl, haloalkyl, or a hydroxyl protecting group;

or a pharmaceutically acceptable salt thereof.

3. The method of claim 2, wherein R^1 is hydrogen.

4. The method of claim 2, wherein R^2 is hydrogen.

5. The method of claim 2, wherein X^1 is O.

6. The method of claim 2, wherein X^2 is O.

7. The method of claim 2, wherein Y^1 is -CH_2-, -O-, -N(R^a)-, or a bond, and Y^2 is -CH_2-, -O-, or -N(R^c)-.

8. The method of claim 2, wherein L is a saturated straight C_{4-10} hydrocarbon chain substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxy, or amino, and further optionally interrupted by -O- or -N(R^c)-.

9. The method of claim 2, wherein L is an unsaturated straight C_{4-8} hydrocarbon chain containing 2-5 double bonds optionally substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, or C_{1-4} alkoxy, and further being optionally interrupted by -O- or -N(R^g)-, where R^g is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl.

10. The method of claim 2, wherein L is -$(CH=CH)_m$- where m is 2 or 3, L being optionally substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, or C_{1-4} alkoxy, and further being optionally interrupted by -O- or -N(R^g)-.

11. The method of claim 2, wherein A is phenyl, furyl, thienyl, pyrrolyl, or pyridyl.

12. The method of claim 11, wherein A is phenyl optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, or amino.

13. The method of claim 1, wherein the cells are contacted with the compound in vivo.

14. The method of claim 1, wherein the cells are contacted with the compound in vitro.

15. The method of claim 1, wherein the compound is 5-phenyl-2,4-pentadienoylhydroxamic acid.

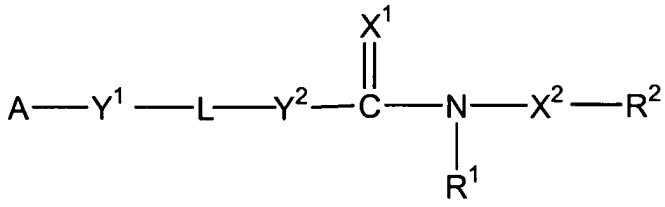
16. The method of claim 1, wherein the compound is 7-phenyl-2,4,6-heptatrienoylhydroxamic acid.

17. The method of claim 1, wherein the compound is trichostatin.

18. The method of claim 1, wherein the compound is SAHA.

19. A method of treating lung disease in a mammal comprising administering to the mammal an effective amount of a compound including an oxyamide linkage.

20. The method of claim 19, wherein the compound is of formula (I):



(I)

wherein

A is a cyclic moiety selected from the group consisting of C_{3-14} cycloalkyl, 3-14 membered heterocycloalkyl, C_{4-14} cycloalkenyl, 3-8 membered heterocycloalkenyl, aryl, or heteroaryl; the cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl; or A is a saturated branched C_{3-12} hydrocarbon chain or an unsaturated branched C_{3-12} hydrocarbon chain optionally interrupted by -O-, -S-, -N(R^a)-, -C(O)-, -N(R^a)-SO_2-, -SO_2-N(R^a)-, -N(R^a)-C(O)-O-, -O-C(O)-N(R^a)-, -N(R^a)-C(O)-N(R^b)-, -O-C(O)-, -C(O)-O-, -O-SO_2-, -SO_2-O-, or -O-C(O)-O-, where each of R^a and R^b, independently, is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; each of the saturated and the unsaturated branched hydrocarbon chain being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy,

alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl;

each of Y^1 and Y^2, independently, is $-CH_2-$, -O-, -S-, $-N(R^c)-$, $-N(R^c)-C(O)-O-$, $-O-C(O)-N(R^c)-$, $-N(R^c)-C(O)-N(R^d)-$, -O-C(O)-O-, or a bond; each of R^c and R^d, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

L is a straight C_{2-12} hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxy, hydroxyl, halo, amino, nitro, cyano, C_{3-5} cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C_{1-4} alkylcarbonyloxy, C_{1-4} alkyloxycarbonyl, C_{1-4} alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, $-N(R^e)-$, $-N(R^e)-C(O)-O-$, $-O-C(O)-N(R^e)-$, $-N(R^e)-C(O)-N(R^f)-$, or -O-C(O)-O-; each of R^e and R^f, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

R^1 is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, haloalkyl, or an amino protecting group; and

R^2 is hydrogen, alkyl, hydroxylalkyl, haloalkyl, or a hydroxyl protecting group;

or a pharmaceutically acceptable salt thereof.

21. The method of claim 19, wherein the compound is 5-phenyl-2,4-pentadienoylhydroxamic acid.

22. The method of claim 19, wherein the compound is 7-phenyl-2,4,6-heptatrienoylhydroxamic acid.

23. The method of claim 19, wherein the compound is trichostatin.

24. The method of claim 19, wherein the compound is SAHA.

25. The method of claim 19, wherein the lung disease is cystic fibrosis, chronic obstructive pulmonary disease, asthma, acute bronchitis, or chronic bronchitis.

26. A method of treating cystic fibrosis in a mammal comprising administering to the mammal an effective amount of 5-phenyl-2,4-pentadienoylhydroxamic acid, or a pharmaceutically acceptable salt thereof.

27. A method of treating cystic fibrosis in a mammal comprising administering to the mammal an effective amount of 7-phenyl-2,4,6-heptatrienoylhydroxamic acid, or a pharmaceutically acceptable salt thereof.

28. A method of treating chronic obstructive pulmonary disease in a mammal comprising administering to the mammal an effective amount of 5-phenyl-2,4-pentadienoylhydroxamic acid, or a pharmaceutically acceptable salt thereof.

29. A method of treating chronic obstructive pulmonary disease in a mammal comprising administering to the mammal an effective amount of 7-phenyl-2,4,6-heptatrienoylhydroxamic acid, or a pharmaceutically acceptable salt thereof.

30. A method of treating asthma, acute bronchitis, or chronic bronchitis in a mammal comprising administering to the mammal an effective amount of 5-phenyl-2,4-pentadienoylhydroxamic acid, or a pharmaceutically acceptable salt thereof.

31. A method of treating asthma, acute bronchitis, or chronic bronchitis in a mammal comprising administering to the mammal an effective amount of 7-phenyl-2,4,6-heptatrienoylhydroxamic acid, or a pharmaceutically acceptable salt thereof.